AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-26 (Canceled).

Claim 27 (New): A recombinant peptide vector comprising a leader peptide, linker DNAs and a DNA construct formed by operably linking expression control sequences with a therapeutic gene encoding a fusion protein where the extracellular domain of CTLA4 is bound to the Fc fragment of immunoglobulin, wherein the leader peptide is linked to both ends of the DNA construct by the linker DNAs.

Claim 28 (New): The recombinant peptide vector of Claim 27, wherein the leader peptide consists of 16 amino acids.

Claim 29 (New): The recombinant peptide vector of Claim 28, wherein the 1^{st} to 4^{th} amino acids are amino acids with non-polar aliphatic side chains.

Claim 30 (New): The recombinant peptide vector of Claim 29, wherein the amino acids with non-polar aliphatic side chains are selected from the group consisting of Gly, Ala, Val, Leu and Ile.

Claim 31 (New): The recombinant peptide vector of Claim 28, wherein the 5^{th} and 6^{th} amino acids are amino acids with nonionic polar side chains.

Claim 32 (New): The recombinant peptide vector of Claim 31, wherein the amino acids with nonionic polar side chains are selected from the group consisting of Asn, Gln, Ser and Thr.

Claim 33 (New): The recombinant peptide vector of Claim 29, wherein the 7^{th} amino acid is Gly.

Claim 34 (New): The recombinant peptide vector of Claim 28, wherein the 8^{th} to 12^{th} amino acids are amino acids with basic side chains.

Claim 35 (New): The recombinant peptide vector of Claim 34, wherein the amino acids with basic side chains are Lys or Arg.

Claim 36 (New): The recombinant peptide vector of Claim 28, wherein the 13^{th} amino acid is Gly.

Claim 37 (New): The recombinant peptide vector of Claim 27, wherein the leader peptide has an amino acid sequence of SEQ ID NO: 21.

Claim 38 (New): The recombinant peptide vector of Claim 27, wherein the linker DNAs have a base sequence formed by annealing a base sequence of SEQ ID NO: 22 with a base sequence of SEQ ID NO: 23.

Claim 39 (New): The recombinant peptide vector of Claim 27, wherein the DNA construct and one of the linker DNAs are linked together by a phosphodiester bond between the 5'-terminal phosphate group of the one linker DNA and the 3'-terminal hydroxyl group of the therapeutic gene, the leader peptide and the other linker DNA are linked together by a disulfide bond between the C-terminal Cys of the leader peptide and the 5'-terminal Cys of the other linker DNA, and the two linker

DNAs are annealed together, thereby linking both ends of the DNA construct to the leader peptide by the linker DNAs.

Claim 40 (New): The recombinant peptide vector of Claim 27, wherein the CTLA4 and the immunoglobulin are derived from mammals.

Claim 41 (New): The recombinant peptide vector of Claim 40, wherein the mammals are human beings or dogs.

Claim 42 (New): The recombinant peptide vector of Claim 27, wherein the expression control sequences include a promoter, a signal peptide sequence and a polyadenylation sequence.

Claim 43 (New): The recombinant peptide vector of Claim 42, wherein the promoter is a promoter derived from cytomegalovirus.

Claim 44 (New): The recombinant peptide vector of Claim 42, wherein the signal peptide sequence is a secretory sequence derived from human oncostatin M.

Claim 45 (New): The recombinant peptide vector of Claim 42, wherein the polyadenylation sequence is derived from bovine growth hormones (BGH).

Claim 46 (New): The recombinant peptide vector of Claim 27, wherein the DNA construct is a base sequence shown in SEQ ID NO: 12 or SEQ ID NO: 20.

Claim 47 (New): The recombinant peptide vector of Claim 27, wherein the immunoglobulin is IgA or IgG.

Claim 48 (New): A method for preparing a recombinant peptide vector, which comprises the steps of:

(1) linking a gene encoding the extracellular domain of CTLA4 with a gene encoding the Fc fragment of immunoglobulin so as to prepare a therapeutic gene;

(2) operably linking the therapeutic gene with expression control sequences so as to prepare a DNA construct;

(3) synthesizing a leader peptide and linker DNAs and then linking the leader peptide and the linker DNAs together, so as to prepare a peptide vector; and

(4) linking the both ends of the DNA construct obtained in the step (2) to the leader peptide by the linker DNAs.

Claim 49 (New): The method of Claim 48, wherein the DNA construct and one of the linker DNAs are linked together by a phosphodiester bond between the 5'-terminal phosphate group of the one linker DNA and the 3'-terminal hydroxyl group of the DNA construct, the leader peptide and the other linker DNA are linked together by a disulfide bond between the C-terminal Cys of the leader peptide and the 5'-terminal Cys of the other linker DNA, and the two linker DNAs are annealed together, thereby linking both ends of the therapeutic gene to the leader peptide by the linker DNAs.

Claim 50 (New): A composition for the treatment of autoimmune diseases, which comprises a pharmaceutically effective amount of a recombinant peptide vector as claimed in Claim 27, and a pharmaceutically acceptable carrier.

Claim 51 (New): The composition of Claim 50, wherein the autoimmune diseases are systemic lupus erythematosus.